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DISCOVERIES AND CURRENT EVENTS *

Angola: Locust Movements (1).

6 June 1933. — A very large swarm extending to the limits of sight passed for the second time over the village of Ganda, district of Benguela. The passage lasted nearly 4 hours.

A swarm even larger than the preceding, flying east, passed over the civil post of Ebanga in the civil circumscription of Ganda. The passage lasted 8 hours.

8 June 1933. — Information received from the civil circumscription of Nova Lisboa states that locusts were present in the territory of the civil post of Luimbale.

9 June 1933. — A very large swarm invaded the region of Caconda. A very large red swarm, about 40 km in length, coming from the S. E. settled in the civil circumscription of Lepi, district of Benguela. It departed the following day flying S. E.

A swarm coming from the south, 5 × 3 km, settled in the same circumscription. It departed on the following day, flying N. E.

11 June 1933. — A large swarm was reported at Lufinda, civil circumscription of Chibia. The locusts were dead on the following day.

A very large swarm of 20 × 7 km, coming from Cuima and flying towards Bailundo, passed over the town of Nova Lisboa. It spent the night in the region of Gurimahála, 8 km from the town.

The swarm caused incalculable damage to European and native crops, devastating in its passage wide areas of arable land and large plantations of fruit and forest trees.

13 June 1933. — Large swarms have been frequently reported in the different regions of the district of Bié ; they have caused serious damage to the wheat and other crops.

A very dense red swarm passed over Lepi from 1 to 5 p. m. ; it came from the south and was flying N. It settled in the vicinity of the village and flew away in the same direction three days later.

* Under this and the next heading the countries are arranged in French alphabetical order.

(1) Communication from the Director of the Laboratory of Plant Pathology and Agricultural Entomology, Luanda, transmitted to the Institute by the Government General of the Colony.

A large swarm, the passage of which lasted 4 hours, passed over Bulo, post of Chiumbo, district of Benguela, at 3 p. m.

Further swarms of considerable size passed near Nova Lisboa flying in the direction of the circumscriptions of Lepi and Bailundo.

14 June 1933. — Another swarm, the passage of which lasted 4 hours, passed over Bulo, post of Chiumbo at 3 p. m. and remained the whole night.

A very large swarm of 20 × 20 km, coming from the post of Quipeio, passed at 4 p. m. over the post of Luimbale. It left the following day in the direction of Cassongue, causing considerable damage to the crops.

A large swarm coming from the S. settled at 3 p. m. in the vicinity of Vila do Bailundo.

15 June 1933. — A swarm of 5 km, the passage of which lasted 4 hours, passed at midday over the region of Caputo Catolo, post of Chiumbo; this swarm is probably the same that settled in the vicinity of Bailundo.

A red swarm of 40 km passed at 11 a. m. over the village of Cuima. It came from the S. and was flying N. E.

16 June 1933. — A large swarm coming from the E. and flying W. passed over Camabatela, district of Cuanza Norte, from 2 to 4 p. m. The extent of the damage done is not known.

17 June 1933. — A large swarm coming from Ganda passed over the post of Balombo at 5. p. m.

18 June 1933. — A swarm flying from E. to W. passed over the village of Duque de Bragança.

25 June 1933. — A large swarm coming from the S. E. settled at Jamba in the vicinity of Humpata. It left the following day flying N. E.

26 June 1933. — A swarm of red locust (*Nomadacris septemfasciata*) coming from the S. E. passed over the Escola Oficina Oscar, 12 km from Humpata. It departed the following day flying N. E.

The circumscription of Gaconda continued to be invaded in various places by swarms which caused considerable damage to the crops.

28 June 1933. — A large swarm of red locust coming from the S. settled at Humpata. It left the following day flying N. E.

Various very large swarms of red locust invaded the circumscription of Seles, district of Cuanza Sul causing practically complete loss of the wheat and other main crops of Cassongue.

29 June 1933. — Two large swarms passed at 3 p. m. between Vila do Balundo and the civil post of Mungo; they must have been settled before in the neighbourhood of Luahanda.

A swarm of red locust coming from the S. E. settled at 4 p. m. at Humpata and its is vicinity. It departed the following day flying N. E.

30 June 1933. — A swarm of 10 km coming from the S. E. passed over Palanca at 11 km from Humpata, flying N. E.

Extent of locust invasion. — As a result of my observations and the special information received I am able to state that in addition to the swarms reported above a number of others invaded various regions of the territory of Angola, particularly the districts of Sul Huila and Mossamedes, where the most serious damage was reported.

Origin of the swarms. — I am collecting information regarding the origin of the swarms and already have valuable data which will be dealt with in a separate report. I am able to state with absolute certainty that many, and even the greater number, of the swarms which invaded Angola had, unhappily, their origin within the territory. Others came from the neighbouring territories of Rhodesia and Damaralandia.

Species. — I can affirm that the greater part of the swarms that invaded the southern districts belonged to the red locust (*N. septemfasciata*). Also, but rarely, reports have been received of the tropical migratory locust (*Locusta migratoria migratorioides*). In the surroundings of Mossamedes several breeding places were reported of an ash green locust not yet been identified owing to lack of specimens, but which I hope shortly to be able to identify.

Natural enemies. — From information received from the circumscription of Chibia we know that on 12 June a large swarm which had settled the previous day at Lufinda was completely wiped out. During this night the cold was intense. It has been said, in some cases rightly, that the death of the insects was caused by a small larva which was found on the locusts. We are not able to say much about this parasite, or even state with certainty that it was a parasite, as I think was the case, because it was not possible for us to observe living specimens. The larvae which I examined had been dead several days and were completely dried up. If it would be of interest and utility I would try to obtain living specimens and send them to the Imperial Institute of Entomology in London.

The civil post of Otchinjau collected some specimens of insects known by the native name of 'Mandinde' which, according to information I have received, were numerous and devoured a great quantity of locusts. Some of these specimens will be sent to the Imperial Institute.

Methods of control. — The Administration of Agricultural Services and Commerce sent various instructions and circulars about the destruction of locusts in their various stages to the administrative authorities.

Special funds were appropriated for the combat of locusts and equipment was purchased consisting of sodium arsenite and other insecticides, various oils, metal barriers, flame throwers, sprayers, etc. Gangs and posts for the storage of equipment have also been formed for the anti-locust campaign and have begun their activities this year.

The methods of control have up to the present been as follows :—

For hoppers, ditches and barriers.

For adults, flame throwers, and collecting in bags. The method of buying locusts from the natives will also be tried.

Eritrea: Desert and Tropical Migratory Locusts (*Schistocerca gregaria* and *Locusta migratoria migratorioides*).

During August 1933 numerous swarms of locusts (*Schistocerca gregaria* and *Locusta migratoria migratorioides*) were observed in the eastern plain, the territories of the Seraè and of Acchelè Guzai.

It would seem that certain swarms of unrecorded colour were composed of *L. migratoria migratorioides*.

From 2 to 17 August red and brownish-red individuals (*Schist. gregaria* and *L. migratoria migratorioides*) coming from the Anglo-Egyptian Sudan penetrated into Eritrea and passed over Omagger, Gullui and Sabderat, flying towards the east. In the course of the month swarms were reported from all parts of the southern portion of the Colony.

On the 8th some yellow locusts (*Schist. gregaria*), sexually mature, coming from the Tigrai passed over Rendacomo, then returned in the direction from which they had come. On the 10th other yellow locusts (*Schist. gregaria*) settled near Maiò (Acchelè Guzai). A swarm of *L. migratoria migratorioides* laid along the torrent Obillet (Barentù) on 30 August.

Locusts caused slight damage to pasture in the territory of Maiò, also to some fields of dura (*Andropogon Sorghum*) and teff (*Eragrostis abyssinica*) in the Seraè and to small plots of dura in the vicinity of Barentù (1).

* * *

At the beginning of September 1933 numbers of winged swarms coming from across the Ethiopian frontier invaded the western plain (Tessenei) and damaged some crops of dura and some pasture between the Gasc and the Setit. Laying took place in three localities which have already been surveyed and inspected with a view to destroying hoppers as soon as they hatch. Damage in other regions of the Colony has been unimportant. The Hamasien has remained free. Swarms were composed mainly of *L. migratoria migratorioides* and also of *Schist. gregaria* (2).

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Last year in the month of September numbers of swarms of locusts penetrated into the Colony from across the Abyssinian and Anglo-Egyptian borders, passed over the upland plateau and laid eggs in the eastern plain. During the month also numerous breeding places were observed particularly along the Red Sea coast.

This year such an invasion has not taken place: the upland plateau and the eastern plain have remained almost completely free from locusts.

(1) Communication from the official correspondent of the Institute, Dr. Rolando Guidotti, Chief of the Agricultural Bureau of Eritrea, Asmara, transmitted by the Government of the Colony.

(2) Communication from the Government of Eritrea, transmitted to the Institute by the Ministry for the Colonies (Bureau of Studies and Propaganda).

One swarm consisting of *L. migratoria migratorioides* of unrecorded colour, flying towards Arresa, was reported on the 5th at Tucul, and another on the 6th near Adi Quala, flying east.

During the whole month swarms of *L. migratoria migratorioides* and *Schist. gregaria* circled more particularly in the territory between the Gasc and the Setit.

On the 10th and 11th eggs were laid in the neighbourhood of Barentù and on the 20th to the west of Tolè (Barentù) and at Curateb (Omagger) on the frontier.

On the 18th and 20th the presence of hoppers (*L. migratoria migratorioides*) was reported in the territory of Adergulià.

The damage to crops has been slight. In the Seraè, near Arresa, certain fields of dura (*A. Sorghum*) and of 'dagussa' (*Eleusine coracana*) were destroyed, and at Tessenei about 40 fields of 'bultuc' (*Pennisetum typhoideum*) (1).

United States of America: Recent Increase in Root Knot (2).

During the fall of 1931, Dr. H. S. Cunningham reported a serious infestation of root knot caused by *Heterodera radicicola* in potato tubers on Long Island, New York. In all about 40 acres of potatoes were found to be so badly infested that the tubers were practically unsaleable.

No records exist of similar infestations so far north, and it has been assumed that this unusual abundance was in some way related to the high climatic temperatures of the past few years. Recently summarized weather records show that temperature trends in the central and eastern portions of the United States have been prevailingly high for a long time. Fall and winter temperatures have in general been unusually high in this region for at least ten years.

Further support has been given to the theory that a longer yearly warm period was making possible the northern extension of the root knot nema by Dr. R. F. Poole's observation that it was becoming more abundant in the higher, cooler regions of North Carolina. In substance Poole's report is as follows: Only recently was there any evidence that the nematode, *Heterodera radicicola*, may become a problem in the Piedmont and mountain areas. It has long been known to cause severe injury on the sandy soils of the coastal region, but even here it had not infested all areas. During the 1932 season heavy infestation of tobacco was observed in Stokes County, in the foothills of the mountains. A survey showed infestation in more than 85 per cent of the tobacco fields. It was much worse on some areas than on others. Tobacco was killed in many areas before all of the crop could be harvested. Heavily infested plants devel-

(1) Communication from the official correspondent of the Institute, Dr. Rolando GUIDOTTI, Chief of the Agricultural Bureau of Eritrea, Asmara, transmitted to the Institute by the Government of the Colony.

(2) Communication from the official correspondent of the Institute, Dr. Neil E. STEVENS, Senior Pathologist, Plant Disease Survey, Bureau of Plant Industry, United States Department of Agriculture, Washington.

oped hollow stalks, dead tips, and dead margins on the leaves. Serious damage results, since the leaves of infested stalks cure unevenly and are poor in quality. Heavy losses of other crops were due to heavily infested root systems.

The disease has been prominent on corn. It has been seen on rye, crimson clover, vetch, and Austrian winter peas. These plants were heavily infested although they are winter cover crops. Vetch was killed by the disease in some heavily infested areas. The character of infestation on vetch indicates that the nematodes do not cease to be active during the winter in the coastal region.

India: Diseases in the Bombay Presidency (1).

The following parasites have been reported for the first time in the Bombay Presidency :—

Septoria cannabis (Lasch.) Sacc. on *Cannabis sativa* L.

Coleosporium oldenlandiae (Mass.) Butl. on *Oldenlandia aspera.*

Cercospora commelinae Kal. & Cke. on *Commelina* sp. and *Septoria atchinsonii* Syd. on *Jasminum malabaricum* L. are believed to be recorded for the first time in India.

Uromyces fabae (Pers.) deBary and *Erysiphe polygoni* DC. on *Lathyrus odoratus* L. are recorded for the first time in India. Both these parasites are doing great damage to sweet pea crops around Poona.

Southern Rhodesia: Locust Invasion, 1933 (2).

Monthly Report No. 9, August, 1933.

There is little change in the general position.

1. Tropical Migratory Locust (*Locusta migratoria migratorioides*).

No records of this species in the colony have been obtained during the month.

2. Red Locust (*Nomadacris septemfasciata*).

The swarms of this species appear to be exhibiting greater activity and to be more conspicuous with the advent of warmer weather. They seem also to be becoming more hungry and loss of at least one extensive irrigated crop of wheat is reported.

Entomologists may note that the flying swarms of this species now exhibit the full red coloration associated with migratory swarms, but that the purplish pink suffusion at the base of the hind wing is still very irregularly developed. Certain large swarms early in the month showed practically no development of this suffusion.

(1) Communication from Mr. M. K. Patel, Ag. Plant Pathologist to Government, Bombay Presidency, Poona.

(2) Communication from the official correspondent of the Institute, Mr. Rupert W. Jack, F. E. S., Chief Entomologist, Department of Agriculture, Salisbury, Southern Rhodesia.

Red Locust adults kept continuously in cages have not developed the swarm coloration, but remain brown with the medium light stripe down the pronotum and elytra conspicuous. These specimens show strong development of the purplish pink suffusion at the base of the hind wings and, probably owing to lack of exposure to the sun, this suffusion is notably dark. It appears clear that the development of this suffusion is not correlated with the development of red pigment on the chitinous parts of the integument.

There were no signs of egg development to the end of the month.

Reports from neighbouring states reveal a very grave position in reference to the Red Locust and all indications point to a further heavy invasion of the colony when the large migratory movements commence. The Union of South Africa has now been invaded by the Red Locust. Swarms have penetrated Zululand and Natal apparently from Mozambique. The Transvaal has been invaded by swarms thought to have come from Bechuanaland.

Turkey: Plant Enemies observed in Anatolia during 1933 (1).

Dociostaurus maroccanus. — The Moroccan locust made its appearance this year as in previous years in the region of Gaziayintap, Mardin and Urfa. But many swarms perished as a result of the excessive drought which held during their period of greatest activity. Swarms coming from Syria which usually penetrate into our country have not been observed this year. Only the desert steppe between Mardin and Urfa was infested with eggs, which may be expected to hatch in 1934. For the anti-locust work this year zinc barriers and poisoned bait were used.

Locusta migratoria ph. *danica*. — This locust caused damage in the region of Divarbekir. It was controlled by means of poisoned bait.

Calliptamus italicus. — The Italian locust invaded Thrace and the region of Brussa and Samsun. As it was however in the form of solitary individuals, it was not found necessary to resort to control measures.

Eriophyes avellanae. — The nut bud mite causes each year considerable losses of hazels in the region of the Black Sea. This year the infested buds were collected and burnt. It is the first time that any control measure has proved successful.

Balaninus nucum. — The damages caused to hazels by this beetle were insignificant.

Carpocapsa pomonella. — The codling moth causes considerable damage to apple trees in Anatolia. This year the Ministry of Agriculture made a special organisation responsible for the control measures to be carried out in the region of Kastamonu, Amasya and Nigde, from which the fruit is exported abroad. Lead arsenate was used for two sprayings of the trees. In this way 80 % of the crop was saved.

(1) Communication from the official correspondent of the Institute, Mr. SUREYA, Councillor of State, Angora.

Hyponomeuta malinellus. — The ermine moth is very widely distributed in Anatolia. The damage caused to apple and apricot trees is considerable. It has been controlled by means of ' Uraniagrun '.

Ephestia cautella. — Damage has been reported to fig trees in the region of Aydin. As it was observed that the females lay their eggs on figs spread out on planks to dry and that the caterpillars are transformed to chrysalises when the figs are stored, the figs have been protected while drying by means of toxic gas and the granaries and other places of storage have been thoroughly disinfected.

Dacus oleae. — The olive fly is present in all the olive plantations. This year the Berlese method of control has been tried in the region of the Sea of Marmara.

Chrysomphalus dictyospermi. — This scale insect causes damage in orange orchards in the region of Adana. Three generations per annum have been observed. Control is attempted with polysulphides.

Diaspis pentagona. — It was only in 1913 that the mulberry scale was observed for the first time attacking mulberry trees in the region of Istanbul. It has been attempted to eradicate this breeding centre by pulling up the mulberries. But as the insect attacks also walnuts, peaches and locust trees it was not found possible to prevent its spread. A serious invasion was observed in Anatolia in 1933. During the year numbers of mulberry trees have been killed and peaches and other fruit trees have been seriously damaged.

Many persons try to control this pest in their gardens by using emulsions of soap and petrol and solution of polysulphides.

Sus scrofa. — Wild boars have for a long time caused considerable damage each year to the potato and maize crops in Anatolia, particularly in the Black Sea region. The Ministry of Agriculture in 1932 made a special organisation responsible for the campaign agaist them which has been carried out by hunting and in certain districts by means of poisoned bait.

LEGISLATIVE AND ADMINISTRATIVE MEASURES

Germany. — A Ministerial Circular of 22 June 1933 prescribes the adoption of a new method for testing whether, after disinfection with ethylene oxide, the last traces of toxic gas have disappeared.

The method, invented by Dr. Deckert, is as follows :— The air to be tested is passed through a 22 % solution of common salt to which has been added a little phenolphthalein. In this solution, heated to boiling point, the ethylene oxide reacts with the sodium chloride and is transformed into ethylene-chlorhydrine with the formation of sodium hydrate, which changes the colour of the phenolphthalein to pink or red. (*Amtliche Pflanzenschutzbestimmungen*, Berlin 1933, Bd. V, Nr. 2, S. 64-65).

*** By two Ministerial Circulars of 3 and 4 July 1933, persons responsible for testing whether after disinfection with ethylene oxide or hydrocyanic acid gas the last traces of toxic gas have disappeared, must be capable of distinguishing accurately the various shades of pink, red and blue. (*Amtliche Pflanzenschutzbestimmungen*, Berlin 1933, Bd. V, Nr. 2, S. 63 u. 65).

Germany (Anhalt). — A number of musk rats [*Fiber zibethicus*] having been killed in the course of 1933, a communication from the Ministry of State, dated 19 August 1933, draws attention to the Police Ordinance of 18 October 1918 which requires that the police shall be notified whenever a musk rat has been killed. Musk rats must be combatted by every possible method. The prize offered for each specimen killed has been raised to 3 RM. (*Nachrichtenblatt für den Deutschen Pflanzenschutzdienst*, Berlin 1933, 13. Jahrg., Nr. 10, S. 86).

Germany (Hanover). — By Police Ordinance, dated 22 June 1933, relating to the control of rats and field voles in the circumscription of Hadeln, owners and holders of any cultivated land and all persons responsible for the upkeep of roads, ditches, railway embankments, etc. are required to comply with the regulations prescribed on the subject by the competent authorities.

The principal officer of the circumscription will fix the limits within which the control measures are to be executed, the time of the campaign and the methods to be used. He will also indicate whether the control measures are to be carried out by the owners, holders or managers of the property or by persons engaged by the firms making or supplying the materials used in the control campaign. (*Amtliche Pflanzenschutzbestimmungen*, Berlin 1933, Bd. V, Nr. 2, S. 66-67).

Germany (Prussia). — With a view to the control of potato wart disease [*Synchytrium endobioticum*] in the province of Saxony, it has been forbidden since 10 April 1932 to plant in the circumscription of Jerichow II in gardens and fields exceeding ¼ hectare in extent other varieties of potato than those recognised to be resistant to the disease.

A similar regulation, dated 13 March 1933, which entered into force 1 July 1933, applies to various communes in the circumscription of Erfurt. In these communes it is also prescribed that resistant varieties shall be increasingly used, so that by the end of two years the non-resistant varieties may be completely replaced by resistant varieties.

In the circumscription of Osterburg the cultivation of any non-resistant variety is absolutely prohibited as from 1934. (*Nachrichtenblatt für den Deutschen Pflanzenschutzdienst*, Berlin 1933, 13. Jahrg., Nr. 10, S. 86).

Germany (Westphalia). — By Ordinance of 7 March 1933, which modifies that of 21 October 1932 relating to the control of the commerce in potato varieties resistant to wart disease [*Synchytrium endobioticum*] intended for use as seed, it is forbidden in Westphalia to market or hawk such potatoes.

On the arrival of a consignment of potatoes resistant to wart disease the directors of the authorised market premises shall have a sample taken by a sworn official or by an expert in accordance with the regulations on the subject fixed by the German Agricultural Council. This sample is to be sealed and sent to the Central Plant Protection Service. (*Amtliche Pflanzenschutzbestimmungen*, Berlin 1933, Bd. V, Nr. 3, S. 86).

England. — The Order of 7 June 1933 which is entitled 'The Importation of Plants Order of 1933' and which came into operation on 15 July 1933, requires all imported consignments of all classes of living plants and parts thereof (except seed) for planting, and all potatoes, to have been officially examined by the authorities of the country in which they were grown and certified as having been found to be healthy and free from any evidence of the presence of any insect, fungus or pest destructive to agricultural or horticultural crops. An additional certificate is required, as hitherto, in respect of plants grown in France, to the effect that the Colorado Beetle [*Leptinotarsa decemlineata*] has not been known to exist within 200 kilometres of the place where the plants, etc. were grown.

Consignments which arrive unaccompanied by the prescribed certificates of health and which were formerly allowed to proceed to their destination, will now be detained by the Officers of H. M. Customs and Excise and will be required to be destroyed or re-exported at the expense of the importer unless a licence is issued authorising the plants, etc. to be disposed of otherwise. If this licence is granted it may require the consignment to be examined by one of the Ministry's Inspectors when, if the plants, etc. are found to be healthy, a certificate authorising their release will be issued after payment by the importer of the fee prescribed for this service.

The existing prohibition of the importation of potatoes grown in the United States of America, the Dominion of Canada, or in France, remains in force ; the transhipment in English or Welsh ports of such potatoes is also prohibited except under licence from the Ministry. The health certificate for potatoes from other countries which was specified under the previous regulations required an additional statement to the effect that no case of Wart Disease [*Synchytrium endobioticum*] has occurred within five hundred yards of the place where the potatoes were grown ; in the new Order this distance has been extended to two kilometres (approximately 1 ¼ miles).

An additional provision of the new Order relates to cider apples imported between 15th March and the 14th October in each year. Between these dates cider apples grown in France must be accompanied by an official certificate in similar terms to that required during the same period in respect of raw vegetables grown in France, i. e., to the effect that the Colorado Beetle has not been known to exist within a radius of at least two hundred kilometres of the place where the produce was grown. Raw vegetables and cider apples grown in any other European country and imported between the above mentioned dates must be accompanied by an official certificate of origin.

The new Order continues the restrictions which were first imposed in 1930 on the importation of raw apples grown in the United States of America, and between the 7th July and the 15th November in every year these may be imported only when accompanied by an official certificate to the effect that they are of one or other of the two highest grades recognised by the Federal Department of Agriculture.

Any imported plants, potatoes, raw apples or raw vegetables found to be unhealthy will be required to be treated, destroyed or re-exported at the expense of the importer. (Ministry of Agriculture and Fisheries. Importation of Plants, Potatoes, etc. London, June, 1933, 1 p. [Mimeographed]).

*** By the Colorado Beetle Order of 1933, dated August 23, 1933 the occupier of any land, in or on which Colorado Beetle (*Leptinotarsa decemlineata*) exists or is suspected to exist, shall, with all practicable speed, give notice in writing to the Ministry of Agriculture and Fisheries of the existence or suspected existence thereof, and such notice shall, when practicable, be accompanied by a specimen thereof.

No person shall, except with the authority of, and in accordance with the instructions of, an Inspector of the Ministry :—

(1) spray or otherwise treat any crop infected by or suspected of being infected with Colorado Beetle ;

(2) have in his possession any live Colorado Beetle which has been taken or removed from any crop ; or

(3) keep any live Colorado Beetle in captivity.

An Inspector may enter upon and examine any crop upon any land in, on or in the vicinity of which he has reason to believe that Colorado Beetle exists or has existed.

An Inspector may, by notice in writing, declare any land in, on or in the vicinity of which Colorado Beetle exists or is reasonably suspected by him to exist, to be an Infected Place for the purposes of this Order and such land shall continue to be an Infected Place until the notice is withdrawn by a notice in writing signed by an Inspector.

No person other than the occupier of land which is, or forms part of, an Infected Place, or his servants or agents, shall enter the Infected Place except with the authority of an Inspector.

So long as a declaration of any land as an Infected Place remains in force, no crop shall be planted upon any land to which the declaration relates without the approval of an Inspector.

No person shall, without the authority of an Inspector, remove or cause or permit to be removed from any Infected Place any potato plants, haulms or tubers, or any tomato plants or tomatoes.

An Inspector and any person authorised in writing by him for the purpose may enter any Infected Place and treat, remove or destroy, or cause to be treated, removed or destroyed, any crop thereon, and may take such other steps as the Inspector may think expedient for preventing the spread of Colorado Beetle ; and the owner of the crop and the occupier of land on which the crop is growing

or stored, or of any land within an Infected Place, shall render all reasonable assistance and facilities for carrying out these provisions.

Where any crop is removed or destroyed under the provisions of this Order, compensation may be paid for such removal or destruction in accordance with the provisions of the Destructive Insects and Pests Acts, 1877 to 1927. (*Statutory Rules and Orders, 1933, No. 830. Destructive Insect and Pest, England. The Colorado Beetle Order of 1933. Dated August 23, 1933.* (*D. I. P. 569*). London, 1933, 5 pp.).

Danzig (Free City of). — By Ordinance of 15 May 1933 new measures have been adopted with regard to the control of potato wart disease (*Synchytrium endobioticum*) and the Colorado beetle (*Doryphora* [*Leptinotarsa*] *decemlineata*).

Potato crops and stocks will be submitted to control by the police in collaboration with the Plant Protection Service.

Any new outbreak of wart disease which is ascertained or suspected must be declared to the police, to the Central Bureau of the Plant Protection Service or to the Chief Officer of the Commune.

On land known to be infected the residues of the potato crop must be collected and carefully destroyed by burning or burying.

It is forbidden to replant potatoes grown on such land. It is forbidden to allow potatoes grown on such land to leave the farm or to use them otherwise than cooked. This regulation applies also to potato waste which is to fed to stock. Farms known to be infected with wart disease may not sell or otherwise dispose of farmyard or liquid manure.

It is forbidden to plant potatoes on infected land within five years of the discovery of infection. It is forbidden to plant on neighbouring land where there is risk of infection varieties other than those declared by the Plant Protection Service to be resistant to wart disease.

It is forbidden to plant in gardens of the City of Danzig varieties other than « Paulsens Juli » and « Modrows Preussen ».

The measures to be taken for the control of the Colorado beetle will be fixed by the police in accordance with directions issued by the Senate. (*Amtliche Pflanzenschutzbestimmungen*, Berlin 1933, Bd. V, Nr. 2, S. 67-69).

France. — By Ministerial Decree of 19 September 1933 the list of countries infected with potato wart disease (*Synchytrium endobioticum*) enumerated in Article 1 of the Ministerial Decree of 6 June 1924, modified by the Ministerial Decrees of 20 December 1924, 2 November 1925, 15 September 1927 and 16 May 1933 [see this *Bulletin*, 1933, No. 9, p. 206] is completed by : the territory of the Free City of Danzig. (*Journal Officiel de la République Française*, Paris, 21 septembre 1933, LXV^{ème} année, n° 221, p. 9900).

Italy. — The Ministerial Circular No. 392 of 5 September 1933, addressed to the Regional Phytopathological Observatories, fixes the regulations to be observed for the exportation of chestnuts to the United States of America.

(*Bollettino Ufficiale del Ministero dell'Agricoltura e delle Foreste*, Roma, 1° ottobre 1933, anno V, n. 19, pp. 3655-3659).

*** The Decree-Law Royal No. 1372 of 28 September 1933 authorises the Ministry of Agriculture and Forests to contribute to the costs of control of the citrus scale insects.

Three million liras have been earmarked for this purpose in the extraordinary part of the Ministry's budget for the financial year of 1933-34. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 2 novembre 1933, anno 74°, n. 254, p. 5015).

*** By three Ministerial Decrees of 7 October 1933 the communes of Montemiletto, San Martino Valle Caudina (province of Avellino), Folignano, Grottammare (province of Ascoli Piceno), and Caselle in Pittari (province of Salerno) have been declared infected with grape phylloxera. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 20 ottobre 1933, anno 74°, n. 245, p. 4846).

Morocco (French Zone). — By two Decrees of the Director of Waters and Forests dated 22 and 27 July 1933, the destruction of rabbits has been authorised in certain zones of the region of the Rharb and in that of Meknès. (Empire Chérifien, Protectorat de la République Française au Maroc. *Bulletin Officiel*, Rabat, 4 août 1933, XXII[ème] année, n° 3084, p. 740-741).

*** By Viziriel Decree of 11 August 1933 (18 rebia II 1352), owners and holders of land, settlers, share tenants, tenants, usufructuaries, managers, native cooperative bodies, administrators of land belonging to the State, municipalities, public establisments and Habou property, and occupiers or persons exploiting in any capacity property on which are found nests of the common house sparrow (*Passer domesticus*) and of the Spanish sparrow (*P. hispaniolensis*) are required, between 1 March and 30 June of each year, to destroy any nests, eggs and young of the birds mentioned.

The persons specified are required during the whole year to destroy any adult sparrows and more particularly any flocks residing on their land.

In woods and forests however it is obligatory to carry out these measures only to a depth of thirty metres.

The local authorities may in agreement with the regional inspector of plant protection and phytosanitary inspection prescribe any measures necessary for the application of the present Decree and, more particularly, the destruction of wild plants, other than trees, capable of favouring the nesting of sparrows.

The destruction of such plants may be ordered when the plants in question are situated within forest boundaries.

When it applies to woody plants the opinion of the Director General of Public Works and of the Director of Waters and Forests must be previously obtained.

The Viziriel Decree of 24 March 1923 (6 chaabane 1341) containing regulations relating to the destruction of sparrows' nests is annulled. (Empire Chérifien. Protectorat de la République Française au Maroc. *Bulletin Officiel*, Rabat, 1[er] septembre 1933, XXII[ème] année, n° 1088, p. 863).

*** The Dahir of 11 August 1933 (18 rebia II 1352) anulls the Dahir of 22 May 1925 (28 chaoual 1343) making obligatory the destruction of caterpillars. (Empire Chérifien. Protectorat de la République Française au Maroc. *Bulletin Officiel*, Rabat, 6 octobre 1933, XXII[ème] année, nº 1093, p. 981).

*** The Viziriel Decree of 11 August 1933 (18 rebia II 1352) prescribes the measures to be taken for the destruction of ' chenilles des friches ' (larvae of Lepidoptera which live on the wild herbaceous vegetation and multiply to form large swarms).

Owners or holders of land, settlers, share tenants, tenants, usufructuaries, agents, native cooperative bodies, administrators of property belonging to the State, municipalities, public establishments and Habou property, and occupiers or persons exploiting in any capacity land on which such caterpillars occur, are required, between 1 November and 1 April of each year, to destroy the caterpillars and the webs that are woven by certain of them as and when they appear. In woods and forests however it is obligatory to carry out such destructive measures only on a strip thirty metres in depth. (*Ibid.*, p. 981-982).

*** A Decree of the Director General of Agriculture, Commerce and Land Settlement, dated 30 August 1933, establishes *inter alia* that it is illegal to import, transport for purposes of marketing, to hold for sale, to sell or dispose of, under the designation of seed wheat, any wheat containing at the time of consignment more than 1 % of total impurities or more than 2 % of broken grain.

Are considered as impurities not only inert matter and seeds other than wheat, but also wheat grain affected with bunt or smut. (Empire Chérifien. Protectorat de la République Française au Maroc. *Bulletin Officiel*, Rabat, 8 septembre 1933, XXII[ème] année, nº 1099, p. 888-889).

*** By Decree of the Director of Waters and Forests, dated 7 September 1933, owners or holders of lands situated within the territory of the Bureaux of Native Affairs of Kelâa-des-Slès and Tafrant, region of Fez, are authorised to destroy wild boars on their lands, at any time and by any means, except fire. Boars killed in these conditions may not however be transported, hawked or exposed for sale. The present Decree will remain effective until the last day of the close season of 1934. (Empire Chérifien. Protectorat de la République Française au Maroc. *Bulletin Officiel*, Rabat, 15 septembre 1933, XXII[ème] année, nº 1090, p. 910).

Peru. — By Ministerial 'Resolución' No. 224 of 16 June 1933 a Commission has been appointed to study and ascertain the most suitable localities for the installation of factories for the extraction of rotenon, to establish such factories and decide on the methods to be used for the extraction. (*La Vida Agrícola*, Lima, 1933, vol. X, no. 117, pág. 1347).

Saar Basin. — The Police Ordinance of 25 August 1933 contains amendments to the regulations [see this *Bulletin*, 1933, No. 9, p. 208] concerning the San José scale (*Aspidiotus perniciosus*).

Spain has been added to the list of countries from which it is forbidden to import living plants or parts of living plants. It is also forbidden to import fresh fruits or fruit waste from any of the countries included in the said list.

Such products coming from countries other than those indicated may be imported only on condition that the consignments are accompanied by an official certificate of the country of origin stating the place of origin.

Consignments not complying with these regulations will be put at the disposal of the consigners. In the case of the consigner or his representative not disposing of the products within eight days they may be destroyed by burning or utilised in any way which entails no risk of spreading the San José scale.

Consignments which in the opinion of the experts of the official Plant Protection Service are infested or are suspected of infestation by the San José scale will be destroyed on the spot by burning without compensation being payable to the consigner or his representative. An expert who is present will prepare an account which will be communicated to the Government of the country of origin. (*Nachrichtenblatt für den Deutschen Pflanzenschutzdienst*, Berlin 1933, 13. Jahrg., Nr. 10, S. 86-87).

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Loranthus spp., *Cuscuta* sp., lichens and moss, *Cephaleuros parasiticus*, *Hemileia vastatrix*, *Pestalozzia theæ*, *Glomerella cingulata*, *Laestadia camelliæ*, *Cercospora coffeicola*, *C. theæ*, *Cercosporella theæ*, *Exobasidium vexans*, *Gloeosporium coffeanum*, *Corticium koleroga*, 'maladie du filament', *C. theæ*, *C. invisum*, *C. salmonicolor*, *Nectria cinnabarina*, *N. bainii*, *Stilbella theæ*, *Macrophoma theicola*, *Massaria theicola*,

Helicobasidium compactum, Septobasidium bogoriense, Rosellinia arcuata, R. bunodes, Ustulina maxima, Sphaerostilbe repens, Thyridaria tarda, Armillaria mellea, Poria hypolateritia, P. hypobrunnea, Ganoderma pseudoferreum, Fomes lamaoensis, F. lignosus, F. lucidus, F. applanatus.

In an appendix a description is given of the ' ver tournant ' or 'borer tournant' (larva of the Longicorn ?).

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[With summary in English. *Penicillium glaucum*, *Botrytis cinerea*, *Alternaria tenuis*].

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[Among other things the writer remarks that the principal enemy of the banana in the Colony is a scale insect (*Aspidiotus destructor*) ; the plants are attacked also by termites and nematodes. Two cryptogamic diseases have also been observed, one of which appears to be caused by *Helminthosporium musarum*].

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[The first part of this essentially practical book is concerned with general matters relating to insects, collecting, breeding, preparation and preservation, and with the control of species injurious to plants. The second part deals with the biology and habits of insects, both useful and harmful. Part 3 describes in more detail certain injurious species, namely :— *Gonocerus acuteangulatus*, *Tingis pyri*, *Gryllotalpa vulgaris*, *Balaninus nucum*].

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